Missouri Department of Higher Education

Building Missouri's future... by degrees®

NEW PROGRAM PROPOSAL FORM

Sponsoring Institution(s): Ozarks Technical Community College

Program Title: Computer Science

Degree/Certificate: Associate of Science (2 yr – A.S.) /Certificate (C1>=1 year but <2 yr)

Options: Click here to enter text.

Delivery Site(s): Ozarks Technical Community College, OTC Lebanon and OTC Waynesville

CIP Classification: 11.0201

*CIP code can be cross-referenced with programs offered in your region on MDHE's program inventory highered.mo.gov/ProgramInventory/search.jsp

Implementation Date: Fall, 2016

Cooperative Partners: Click here to enter text.

*If this is a collaborative program, form CL must be included with this proposal

AUTHORIZATION:

Dr. Steven Bishop, Provost		11-16-15
Name/Title of Institutional Officer	Signature	Date
Renee Graves	417-447-8115	
Person to Contact for More Information	Telephone	

Missouri Department of Higher Education

Building Missouri's future... by degrees®

STUDENT ENROLLMENT PROJECTIONS

Year	1	2	3	4	5
Full Time	40	43	46	49	52
Part Time	12	13	14	15	16
Total	52	56	60	64	68

Please provide a rationale regarding how student enrollment projections were calculated:

OTC currently has a Computer Information Science (CIS) degree which is similar but focuses on the business side of software development. Computer Science focuses on math-based problem solving and appeals to a different set of students. That being said, many of the required classes overlap between these degree programs. The CIS department currently has approximately 80 students a semester that take the introductory computer programming course (CIS120). This course would also be one of the first courses that students in the Computer Science degree program would take so the enrollment in this course has been used to gauge student enrollment. In 2014, the CIS department had 48 graduates, of which 30% continued on to a four-year university. That information has been used in the projections for this new Computer Science degree. A growth rate of 7% was used for full time enrollment and a 3% growth rate was used for part time enrollment.

Provide a **rationale** for proposing this program, including **evidence of market demand and societal need supported by research:**

This program serves the demand for a transfer degree option for students wanting to complete their four-year degree in a computer science program. According to the Demographic and Statistical Data report provided by the Springfield Area Chamber of Commerce, Springfield's workforce has grown more than 9% since 2004 and the city currently has a 5.1% rate of

unemployment. A large majority of area businesses are in the business of software development for industries such as banking, healthcare, and insurance. After speaking with department heads in Computer Science at area universities, they are looking for ways to recruit more students into their programs. This degree will also provide that recruitment path.

Missouri Department of Higher Education

Building Missouri's future... by degrees®

PROGRAM STRUCTURE

A. Total credits required for graduation: 63

B. Residency requirements, if any: _____

C. General education: Total credits: 34

Courses (specific courses OR distribution area and credits):

Course Number	Credits	Course Title
MTH140	5	Analytic Geometry and Calculus I
ENG101	3	Composition I
COM105	3	Public Speaking
PHY220	5	Physics for Engineers and Scientists I
HLT101	2	Lifetime Wellness
PLS101	3	American Government and Politics
MTH141	5	Analytic Geometry and Calculus II
MTH230	3	Linear Algebra
PHY222	5	Physics for Engineers and Scientists II

D. Major requirements: Total credits: 26

Course Number	Credits	Course Title
CIS120	3	Problem Solving and Programming Concepts
CIS150	3	C# Programming 6
CIS170	3	Java Programming I
CIS151 or CIS171	3	C# Programming II or Java Programming II
CIS230 or CIS235	3	Systems Analysis and Design or Web Site Development III
CSC140	4	C++ Programming
CSC210	4	Data Structures
CIS250	3	Database and Query

E. Free elective credits:
3
(Sum of C, D, and E should equal A.)

F. Requirements for thesis, internship or other capstone experience:
0

G. Any unique features such as interdepartmental cooperation:
Interdepartmental cooperation from the CIS department since many of the classes needed for this degree program are already offered.

MDHE
Missouri Department of Higher Education
Building Missouri's future... by degrees®

PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name Ozarks Technical Community College
Program Name Associate of Science in Computer Science
Date November 1, 2015

(Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below. Quantification of performance goals should be included wherever possible.)

1. Student Preparation

- Any special admissions procedures or student qualifications required for this program which exceed regular university admissions, standards, e.g., ACT score, completion of core curriculum, portfolio, personal interview, etc. Please note if no special preparation will be required.
  No special preparation will be required

- Characteristics of a specific population to be served, if applicable.
  The population this degree serves will be students wanting to start their degree in Computer Science and transfer to a four-year university program.

2. Faculty Characteristics

- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.
  Faculty members should have a Bachelors degree in a Computer Science related field. An Associates degree is acceptable with a minimum of 5 years of field experience in a Computer Science related position.

- Estimated percentage of credit hours that will be assigned to full time faculty. Please use the term "full time faculty" (and not FTE) in your descriptions here.
  70% of the credit hours needed for this degree program will assigned to full time faculty

- Expectations for professional activities, special student contact, teaching/learning innovation.
  Faculty members are required to document twenty hours of professional development on an annual basis. Faculty members are required to be faculty advisors and will advise students who have designated this as their degree option.

3. Enrollment Projections

- Student FTE majoring in program by the end of five years.

OTC currently has a Computer Information Science (CIS) degree which is similar but focuses on the business side of software development. Computer Science focuses on math-based problem solving and appeals to a different set of students. That being said, many of the required classes overlap between these degree programs. The CIS department currently has approximately 80 students a semester that take the introductory computer programming course (CIS120). This course would also be one of the first courses that students in the Computer Science degree program would take so the enrollment in this course has been used to gauge student enrollment. In 2014, the CIS department had 48 graduates, of which 30% continued on to a four-year university. That information has been used in the projections for this new Computer Science degree. A growth rate of 7% was used for full time enrollment and a 3% growth rate was used for part time enrollment. Using these figures, full time enrollment for the program is projected to be 52 students by the end of five years.

- Percent of full time and part time enrollment by the end of five years.
  Full time – 76%, part time – 24%. Please see the rational above for question 3 on how these figures were determined.

4. Student and Program Outcomes

- Number of graduates per annum at three and five years after implementation.
  Since the Computer Information Science department currently has a 30% attrition rate, it is expected that the Computer Science degree program will have a similar rate of attrition when projecting the number of graduates. Based on the above enrollment projections, this degree should produce 42 graduates by year three and 50 graduates by year five.

- Special skills specific to the program.
  Advanced math skills, Computer Programming, Logical Problem Solving, Critical Thinking, Physics

- Proportion of students who will achieve licensing, certification, or registration.
  All students will complete a computer programming certification exam recognized by the industry.

- Performance on national and/or local assessments, e.g., percent of students scoring above the 50th percentile on normed tests; percent of students achieving minimal cut-scores on criterion-referenced tests. Include expected results on assessments of general education and on exit assessments in a particular discipline as well as the name of any nationally recognized assessments used.
  The current pass rate for students completing certification exams in the Computer Information Science Department is 70% with the department working to improve that score through various methods. It is expected that students in this degree program would have a similar rate of success. The assessments used in this degree program are:

Microsoft Technology Associate – Software Fundamentals (exam 98-361) and Microsoft Technology Associate – Database Fundamentals (exam 98-364).

- Placement rates in related fields, in other fields, unemployed.
  The CIS department currently has a related placement rate of 67% and non-related placement rate of 13% for a total of 80% placement rate for students with the Associate of Applied Science degree. The related placement for certificate students is 74% and non-related placement 19% for a total of 93% placement for students with the Certificate. It is expected that the Computer Science degree holders will have a similar rate of placement.

- Transfer rates, continuous study.
  Approximately 40% of students in the Computer Information Science program transfer to a four-year university to continue their education. Since this computer science degree program is designed for transfer students we expect to see a larger number, if not all, of these students transfer and continue at another institution.

5. Program Accreditation

- Institutional plans for accreditation, if applicable, including accrediting agency and timeline. **If there are no plans to seek specialized accreditation, please provide a rationale.**
  There are no plans to seek individual accreditation for this program. As an Associate of Science degree, current regional accreditation provides adequate credentials for this degree.

6. Alumni and Employer Survey

- Expected satisfaction rates for alumni, *including timing and method of surveys.*
  Graduation surveys will be distributed to those students completing the program. It is anticipated that students will respond with a 90% or higher satisfaction rate.

- Expected satisfaction rates for employers, including timing and method of surveys.
  As a transfer degree, this program will not have traceable data to determine employer satisfaction.

7. Institutional Characteristics

- Characteristics demonstrating why your institution is particularly well-equipped to support the program.
  OTC already has a Computer Information Science department which has over 200 majors a year. The CIS department contains equipment and faculty which are able to support this new Computer Science program and shares many clases between the two degrees. With this support already in place, the creation of the Computer Science program will allow OTC to

offer students a better method of transferring to four-year university programs in Computer Science.

Southwest Baptist University

College of Business and Computer Science

November 23, 2015

Tiffany Ford, Ed.D.
CIS Department Chair
Ozarks Technical Community College
1001 E. Chestnut Expressway
Springfield, MO 65802

Dear Dr. Ford,

Please accept this letter as an endorsement of the Associate of Science degree in computer science proposed by your department at Ozarks Technical Community College. The proposal provides strong preparation for students wishing to continue their education into an accredited computer science bachelor's degree program.

Students who successfully complete the ASCS at OTC and satisfy the entrance requirements as outlined in the proposed articulation agreement will be enthusiastically accepted into Southwest Baptist University's ABET-accredited B.S. in Computer Science degree program once the articulation agreement under consideration comes to fruition. These students could complete their bachelor's degree in computer science within two years by fulfilling the requirements of the proposed "2+2" articulation agreement. This articulation agreement will be a wonderful choice for your students to consider. The B.S. in Computer Science at SBU is one of only six ABET-accredited computer science programs in the state, and one of only six such programs in the entire nation at an Evangelical Christian university. For students who might prefer a faith-based educational environment, the proposed program offers not only a world-class academic opportunity but the chance to study at a place that is intentional about honoring a Christ-centered faith tradition.

Sincerely,

Tim DeClue, Ph.D.
Professor and Chair
Computer and Information Sciences

Troy Bethards, D.B.A.
Dean
College of Business and Computer Science